SWBAT: compare series and parallel circuits

Jan 4-7:20 AM

SECA Physics
Thursday 5 March 2015

Welcome!!!

H. Leslie Grebe

* Pick up:
- slip of paper (for later)

Opening Questions:

R What are the units for resistance? Ω OHMS
I for current? A AMPS
V for voltage? V VOLTS

Centering

Sep 7-7:04 AM

Mystery Resistor - extra credit

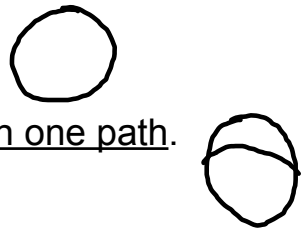
- You may work alone or with at most one other person of your choosing.
- Get a "Mystery Resistor" labeled with a letter from Leslie
- Use the same equipment that our teams used in class. Take measurements that will allow you to calculate the resistance (in Ohms) of your resistor.
- You may work when there is spare time in class or arrange other time with Leslie.

Due by 3:00 Friday 3/27

Jan 19-7:12 AM

Catchy Physics Phrases:

- Series circuits have one path.
- Parallel circuits have more than one path.



Mar 21-7:21 AM

A visit to "Circuitopia"

People: ELECTRONS

Moving / speed of people: CURRENT

"Gotta catch my flight!": VOLTAGE

7.5 secs

Passport checker: RESISTOR

14 secs

Speed? DOWN

Plane -> passport checker -> visa checker -> plane

Speed? SLOW IT DOWN → SERIES

Break! STOPS

2 Passport checkers: PARALLEL

Speed? FASTER THAN 2 SERIES, FASTER THAN 1

Mar 5-8:35 AM

Concept sheet: 6 rows total

Bike

Concept	Meaning	Symbol	Units	Analogy
CHARGE	PROPERTY OF PROTONS & ELECTRONS THAT CAUSES ATTRACTION & REPULSION	q	COULOMB C	
VOLTAGE = ELECTRIC POTENTIAL	POTENTIAL BASED ON POSITION IN AN ELECTRIC FIELD "PUSH"	V	VOLTS V $1V = \frac{1J}{1C}$	- PERSON - PEDALING ⇒ THE PUSH
CURRENT	THE FLOW OF ELECTRIC CHARGE = $\frac{\text{CHARGE}}{\text{TIME}}$	I $I = \frac{q}{t}$	AMPERE A $1A = 1\frac{C}{s}$	- WHEEL / CHAINS MOVING
RESISTANCE	OPPOSITION OF CURRENT "AGAINST THE FLOW"	R	OHMS Ω	BRAKES
OHM'S LAW	VOLTAGE = CURRENT TIMES RESISTANCE	$V = I \cdot R$	$1V = 1A \cdot 1\Omega$	HOW HARD YOU PEDAL & BRAKE AFFECTS SPEED

BIKE!

Feb 23-7:34 AM

Daily 3 Questions

CP - cafeteria homework

* Every day except test/project days
* 3 Questions on the topics of the day
* Main source of daily points
* I am happy to give credit when I have no concerns about someone giving or getting help with the answers.

You can't get your points if you don't have your NAME!!!

Name	Period
1.	
2.	
3.	

Sep 9-7:32 AM

1. How many amps flow when a 3-ohm resistor is hooked to a 12-volt battery? 4A

2. What happens to a series circuit when the passport checker goes on break? STOPS!

3. Is the flow through the circuit (or airport) better when the resistors are in series or in parallel? (Which is faster?)

Feb 18-6:59 AM